

lence of this typhoon, its progressive velocity appears to have varied considerably; on the 11th it was about six miles (eleven and five-tenths kilometers) per hour, and by the 16th, the velocity had increased to about thirty miles (fifty-five kilometers) per hour. An interesting peculiarity appears to have existed in this storm; the barometer at Takau (Formosa) falling very rapidly, and after the passage of the centre it rose very slowly; while, in Japan, the contrary was observed, the barometer falling slowly in advance, and rising rapidly after the centre had passed. Owing to the slow decrease of pressure and the prevalence of light winds, the presence of this storm was quite unexpected at Nagasaki; when the barometer reached the minimum at that station, violent winds occurred, a tree measuring ten feet in circumference being blown down and the fragments carried a considerable distance. Vessels passing near the centre, on the 14th, report the barometer as reading 29.30 (744.) and 29.46 (748.); on the 15th, the s. s. "Appin," near the centre, reported barometer 29.74 (755.)

II.—(15th to 19th.) This typhoon appeared east of Luzon on the 14th, and advanced in the usual course from east to west. It entered the China sea by the channel of Bashee, between Luzon and Formosa, and was central north of Luzon on the 15th. On its approach to Hainan and the gulf of Tonquin, violent southeast winds and rain occurred at Hong-Kong on the 17th, and the barometer fell to 29.71 (754.7), with strong east-northeast to northerly winds, at Pakhoi on the 18th.

III.—(18th to 25th.) During the first part of its course, this disturbance, moving in a northwesterly direction, skirted the eastern coast of Luzon; its course changed when near the twenty-second parallel of latitude, and the disturbance advanced in a west-southwesterly direction, and crossed the northern part of the island of Hainan on the 25th. While this typhoon was moving over the China sea from east to west, a barometric depression (number xxiii.) was, at the same time, central near Japan, and moving in an east-northeasterly direction. This depression caused severe storms in the gulf of Pe-Chi-Li, the s. s. "Appin" reported, on the 22d, winds veering from nw. to n. and nne., force 9.

IV. This typhoon was remarkable for the extraordinary depth of the atmospheric depression, the minimum barometer recorded being 27.04, or 686.9 millimetres. The disturbance developed in the Pacific, east of Formosa, and crossed that island on the 27th; moving in a westerly direction, the typhoon entered the continent south of Swatow and in the direction of Canton. On the 26th, the ship "Cilurnum" experienced the typhoon near Formosa and lost mizzenmast and sails. The ship "Châteaubriand" reported barometer falling from 29.64 (752.9) to 27.04 (686.9) in four hours. When the barometer reached its lowest point, the ship was in N. 22°, E. 121° 20', on the 27th, with winds changing from northwest, force 12, to almost calm for thirty minutes, followed by south to south-southeasterly winds of force 12. Reports from other vessels near the centre differ very slightly from the values reported by the "Châteaubriand," and leave no doubt as to the correctness of that report and as to the extraordinary depth of the atmospheric depression attending this typhoon, the diameter of which appears to have been about three hundred and forty miles.

OCEAN ICE.

August 1st: s. s. "Hohenstaufen," near Cape Race, passed two large icebergs.

2d: Bark "Exile," in N. 46° 50', W. 46° 00', passed a small iceberg; s. s. "Vandalia" passed several icebergs, the smallest of which was supposed to be one hundred feet high; also reported much ice in track of vessels.

16th: s. s. "Lord Gough," in N. 48° 11', W. 48° 16', passed a large iceberg.

TEMPERATURE OF THE AIR.

The distribution of mean temperature over the United States and Canada for the month of August, 1882, is exhibited on chart number ii., by the dotted isothermal lines. The table of

mean comparative temperatures, in the lower left-hand corner of the chart, shows the average temperatures for the month in the several districts, as determined from observations taken at Signal Service stations during the month of August for previous years. The second column shows the mean temperature of the current month; the third column shows the departures of the mean of the current month from the mean of several years.

The temperature has been slightly above the normal in New England and Florida, and normal in the middle and south Atlantic states. Westward of these districts, an area of deficiency covers the whole country east of the Rocky mountains, except in the extreme northwest and in the northern slope, where it has been 1°.2 above the normal. The most marked departure occurred in the southern slope, where the mean temperature was 6°.6 below the normal. West of the Rocky mountains the departures have been from 1°.6 below the normal in the southern plateau to 1°.6 and 1°.5 above the normal in the south and north Pacific coast regions, respectively.

DEVIATIONS FROM MEAN TEMPERATURE.

Under this heading, departures exhibited by the reports of the regular Signal Service stations are shown in the table of comparative temperatures on the left-hand side of chart ii. The following items of interest in connection with this subject are reported by voluntary observers:

Illinois: Riley, mean temperature, 68°.6 or 0°.1 below the August average of the past twenty-one years. The mean temperature of the summer of 1882 is 2°.8 below the summer average of the same period; and is 0°.1 below the mean of the coldest summer, which occurred in 1875.

Indiana: Logansport, mean temperature, 74°.2 or 0°.2 above the August average of the past twenty years. During that period the highest August mean, 80.0°, occurred in 1881; the lowest, 62°.7, occurred in 1863.

Iowa: Clinton, mean temperature, 70°.6, is about the August average.

Kansas: Yates Centre, mean temperature, 73°.3 or 5°.9 below the August average of the past two years. The mean temperature of the summer of 1882, is 3°.6 below the average of the two preceding summers. Lawrence, mean temperature, 72°.55 or 4°.33 below the August average of the past fifteen years. During that period the highest August mean, 83°.45, occurred in 1874; the lowest, 72°.5, occurred in 1875. The mean temperature of the summer of 1882, is below that of any summer for the past fifteen years. Wellington, mean temperature, 72°.2, or 5°.9 below the August average of the past four years. The maximum temperature of the month (98° on the 15th) is the lowest August maximum of the same period. On August 3d, 1880, a minimum temperature of 47° occurred, being 2° below that of August, 1882.

Maine: Gardiner, mean temperature, 67°.0, or 0°.21 above the average of the past forty-six years.

Maryland: Fallston, mean temperature, 71°.02, or 1°.13 below the August average of the nine years from 1872 to 1880 inclusive. During that period the highest August mean, 75°.88 occurred in 1872; the lowest, 70°.55, occurred in 1874.

Missouri: Saint Louis, the Missouri Weather Service reports, mean temperature, 74°, or about 3° below the August average of the past forty-five years. During that period the lowest August mean, 72°.3, occurred in 1875, and in seven different years has the mean temperature of August been as low or lower than that of the present year.

New Hampshire: Grafton, mean temperature, 65°.8, which is above the August average of the past four years. During that period the highest August mean, 68°.4, occurred in 1878; the lowest, 61°.2, occurred in 1879.

New York: Palermo, mean temperature, 66°.6 or 3°.2 below the August average of the past twenty-nine years. During that period the highest August mean, 79°.1, occurred in 1868; the lowest, 62°.0, occurred in 1860.

North Volney, mean temperature, 68°.71 or 0°.27 above the August average of the past fourteen years. During that pe-

Table of Comparative Maximum Temperatures for the Month of August.

State or Territory.	Maximum for August, 1882, Signal Service.		Highest since Signal Service stations were opened—3 to 11 years.			Highest from any other source.			
	Station.	Temp.	Station.	Temp.	Year.	Place.	Temp.	Year.	Length of Record.
Alabama	Mobile	96	Montgomery	108	1874	Mount Vernon Arsenal	104	1860	31 years
Arizona	Phoenix	114	Yuma	115	1879	Fort Mojave	119	1875	22 "
Arkansas	Fort Smith	101	Little Rock	102	1881	Fort Smith	102	1860	41 "
California	Campo	101	Red Bluff and Ysalia	108	1879	Fort Yuma	117	1879	32 "
Colorado	West Las Animas	101	Denver	105	1878	Fort Lyon	108	1868	31 "
Connecticut	New Haven	88	New Haven	90	'73-'81	New Haven	98	1864	87 "
Dakota	Fort Buford	107	Smithville	112	1881	Fort Randall	108	1863	23 "
Do			Fort Sully	107	1876	Fort Lincoln	110	1876	12 "
Delaware	Delaware Breakwater	83	Delaware Breakwater	91	1881	Fort Delaware	101	1865	44 "
Dist. of Columbia	Washington	91	Washington	101	'74 & '81	Washington	101	1838	48 "
Florida	Jacksonville	96	Jacksonville	100	1874	Fort Barrancas	103	1876	60 "
Do						Fort King	106	1833	10 "
Georgia	Savannah	96	Augusta	105	1878	Augusta Arsenal	100	1845	51 "
Do						McPherson Barracks	101	'77 & '81	7 "
Do						Forsyth	101	1861	7 "
Idaho	Fort Lapwai	115	Boise City	103	1879	Fort Boise	121	1871	17 "
Do			Fort Lapwai	103	1881				
Illinois	Cairo and Springfield	88	Springfield	100	1881	Swanwick	110	1881	1 "
Do						Anna	109	1881	5 "
Do						Chicago	102	1868	48 "
Indiana	Indianapolis	90	Indianapolis	101	1881	Laconia	105	1881	7 "
Do						Vevay	104	1881	13 "
Indian Territory	Fort Sill	102	Fort Gibson	108	1874	Fort Gibson	116	1834	53 "
Do			Fort Supply	107	1881				
Iowa	Des Moines	91	Des Moines	113	1881	Fort Madison	103	1870	22 "
Do						Muscataine	104	1881	43 "
Kansas	Dodge City	98	Leavenworth	107	1874	Fort Riley	108	1860	25 "
Do						Fort Leavenworth	106	1881	51 "
Do						Clay Center	114	1881	1 "
Kentucky	Louisville	90	Louisville	105	1881	Newport Barracks	96	1870	28 "
Louisiana	Shreveport	97	Shreveport	105	1881	Baton Rouge Barracks	102	'60 & '77	55 "
Do						Point Pleasant	104	1881	7 "
Maine	Portland	90	Portland	95	1876	Brunswick	98	1868	62 "
Do						Gardiner	94	1841	44 "
Maryland	Baltimore	90	Baltimore	98	1881	Fort McHenry	100	1834	50 "
Do						Fort Washington	100	1863	38 "
Massachusetts	Springfield	93	Boston	97	1881	Amherst	98	1864	45 "
Do						New Bedford	91	1818	69 "
Michigan	Port Huron	88	Detroit	99	1881	Thorntown	101	1881	3 "
Do						Marquette	100	1862	22 "
Do						Fort Brady	96	1854	58 "
Minnesota	Saint Paul	95	Breckenridge	101	1876	Fort Ridgely	102	1861	11 "
Do						Fort Snelling	97	1838	62 "
Mississippi	Vicksburg	95	Vicksburg	100	1878	Fayette	100	1881	7 "
Do						Brookhaven	100	1875	5 "
Missouri	Springfield	94	Saint Louis	108	1881	Saint Louis	106	1834	48 "
Do						Jefferson Barracks	102	1860	36 "
Montana	Terry's Landing	107	Fort Benton	108	1881	Fort Ellis	112	1875	14 "
Nebraska	North Platte	95	Omaha	105	1874	Lincoln	112	1881	1 "
Do						Fort McPherson	110	1870	15 "
Nevada	Winnemucca	102	Winnemucca	100	'78-'79-'81	Fort Halleck	106	1875	14 "
New Hampshire	Mount Washington	66	Mount Washington	72	1876	Auburn	100	1876	5 "
New Jersey	Little Egg Harbor	98	Sandy Hook	98	1881	Atco	100	1881	7 "
Do						Vineland	100	1881	7 "
Do						Newark	95	1877	35 "
New Mexico	Silver City and Fort Bayard	93	La Mesilla	107	1878	Fort Bascom	108	1870	6 "
New York	Albany and Oswego	92	Oswego	97	1881	Auburn	110	1861	38 "
Do						Lansingburg	104	1846	10 "
North Carolina	Kittyhawk	95	Charlotte	101	1881	Fort Johnson	101	1876	56 "
Do						Weldon	107	1881	7 "
Ohio	Cincinnati and Columbus	85	Cincinnati	101	1881	Bellefontaine	104	1881	7 "
Do						Jacksonburg	104	1881	7 "
Oregon	Umatilla	110	Umatilla	104	1879	Fort Dalles	104	1863	16 "
Pennsylvania	Williamsport	92	Pittsburgh	100	1881	Milton	115	1881	3 "
Do						Mount Joy	105	1869	9 "
Rhode Island	Narragansett Pier	91	Newport	87	'76 & '78	Philadelphia	98	1881	123 "
South Carolina	Charleston	97	Charleston	98	1881	Providence	95	1866	35 "
Do						Charleston	98	1752	104 "
Tennessee	Memphis	92	Nashville	104	1874	Aiken	98	1878	7 "
Do						Humboldt	104	'70 & '71	4 "
Do						Austin	106	1881	5 "
Texas	Eagle Pass	108	Rio Grande	108	1876	Ashwood	106	1881	3 "
Do			Eagle Pass	108	1881	Fort Clark	118	1871	25 "
Utah	Salt Lake City	95	Salt Lake City	101	1875	Fort Ringgold	111	1881	31 "
Do						Mount Carmel	108	1877	7 "
Vermont	Burlington	93	Burlington	87	1876	Fort Douglas	105	1871	20 "
Do						Charlotte	102	'76 & '81	8 "
Virginia	Cape Henry	93	Lynchburg	100	1881	Lunenburg	100	1864	20 "
Do						Alexandria	104	1863	20 "
Washington T'y	Almota	109	Almota	99	1881	Fortress Monroe	90	1881	56 "
Do						Fort Walla Walla	107	'60 & '60	12 "
West Virginia	Morgantown	84	Morgantown	92	'74 & '81	Weston	93	1876	3 "
Wisconsin	Madison	87	Milwaukee	88	1874	Flemington	98	1881	1 "
Wyoming	Fort Washakie	103	Cheyenne	95	1881	Fort Howard	100	'23 to '26	30 "
						Fort Laramie	107	1876	27 "

riod the highest August mean, 71° 28, occurred in 1872; the lowest, 64° 76, occurred in 1874. The mean temperature of the summer of 1882 is 66° 72 or 1° 05 below the summer average of the past thirteen years. During that period the highest summer mean, 71° 62, occurred in 1870; the lowest, 65° 45, occurred in 1875.

Waterburg, mean temperature, 68° 05, or 1° 15 above the August average of the past eleven years.

Vermont: Woodstock, mean temperature, 66° 87 or 1° 82

above the August mean of the past fifteen years. During that period the highest August mean, 68° 39, occurred in 1877; the lowest, 60° 73, occurred in 1869; the highest maximum, 95° 7 occurred August 14th, 1876; lowest minimum, 34°, occurred August 27th, 1870.

Virginia: Wytheville, mean temperature, 67° 8 or 2° 0 below the August average of a period of seventeen years.

West Virginia: Helvetia, mean temperature, 66° 85 or 1° 17 below the average of the past six years.

Table showing the monthly maximum and minimum temperatures at Macon, Georgia, from January, 1871, to August, 1882, as recorded by Mr. J. M. Boardman, at Macon, Georgia.

	1871.		1872.		1873.		1874.		1875.		1876.		1877.		1878.		1879.		1880.		1881.		1882.		Means.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January.....	70°	31°	68°	23°	66°	23°	72°	25°	70°	20°	76°	31°	72°	16°	70°	20°	74°	12°	75°	32°	66°	24°	75°	24°	71.3	23.6
February.....	75	33	70	32	74	30	76	30	78	18	78	23	70	20	73	31	72	26	77	26	72	23	78	30	74.3	27.7
March.....	81	39	78	34	77	33	78	36	79	30	77	24	74	24	84	28	80	30	84	34	76	29	88	36	79.7	31.4
April.....	84	50	80	45	84	40	83	40	80	36	88	40	81	42	83	40	88	31	88	34	83	27	88	48	85.3	39.4
May.....	91	51	90	56	90	40	92	49	89	48	92	46	94	42	96	52	90	49	86	52	92	54	86	48	90.7	43.9
June.....	91	51	95	71	90	64	96	70	98	63	95	64	96	63	92	62	92	54	95	62	97	62	93	68	94.2	62.0
July.....	94	70	98	72	91	73	94	70	98	74	95	64	96	68	98	72	102	68	96	68	99	66	91	64	96.1	69.1
August.....	95	72	93	70	92	70	97	70	98	66	97	70	94	66	98	70	92	63	94	67	94	66	92	64	94.7	67.5
September.....	85	49	92	65	92	64	87	62	92	57	92	60	92	60	90	57	90	65	90	51	94	66	.....	.....	90.5	69.6
October.....	83	46	82	44	86	31	81	40	77	33	78	34	73	60	88	36	85	40	84	34	88	48	.....	.....	82.1	40.5
November.....	76	40	72	30	78	24	79	26	78	33	76	30	73	22	78	30	81	24	72	26	84	26	.....	.....	76.5	28.3
December.....	66	21	66	20	73	22	74	26	77	18	68	16	68	21	63	19	74	22	78	4	72	32	.....	.....	70.7	20.1
Means.....	82.6	46.1	82.7	46.8	83.1	42.8	84.1	45.6	84.5	41.3	84.2	41.8	81.9	42.8	83.9	43.1	85.0	40.3	84.9	40.8	84.8	43.6	86.4	46.5	83.8	43.2

The following table shows the maximum temperatures during the months of July, August, and September, for thirty-two years, at Pottstown, Pennsylvania, as noted in the meteorological records of Dr. Charles Moore.

1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
July 4..... 96	July 13..... 96	July 20..... 92	July 8..... 93	July 15..... 93	July 26..... 85	July 11..... 94	July 4..... 98	July 14..... 100	July 11..... 94	July 16..... 96	July 15..... 90	July 4..... 98	July 15..... 93	July 26..... 85	July 11..... 94	July 16..... 96	July 4..... 98	July 13..... 96	July 20..... 92	July 8..... 93	July 15..... 93	July 26..... 85
August 5..... 98	August 4..... 93	August 15..... 81	August 4..... 91	August 15..... 91	August 3..... 94	August 20..... 97	August 1..... 90	August 3..... 90	August 20..... 97	August 25..... 93	August 10..... 92	August 12..... 93	August 25..... 93	August 10..... 92	August 12..... 93	August 25..... 93	August 10..... 92	August 12..... 93	August 25..... 93	August 10..... 92	August 12..... 93	August 25..... 93
September 8..... 80	September 4..... 89	September 9..... 78	September 13..... 87	September 9..... 90	September 2..... 86	September 20..... 90	September 3..... 91	September 11..... 91	September 20..... 90	September 25..... 86	September 6..... 85	September 9..... 92	September 25..... 92	September 6..... 85	September 9..... 92	September 25..... 92	September 6..... 85	September 9..... 92	September 25..... 92	September 6..... 85	September 9..... 92	September 25..... 92

RANGES OF TEMPERATURE AT SIGNAL SERVICE STATIONS.

The monthly ranges of temperature during the month of August have varied at stations east of the Rocky mountains from 19° to 74°, and from 18° to 81° at stations west of that region. The smallest ranges are: New Orleans, 18°; San Francisco, 19°; Delaware Breakwater, Galveston, and Punta Bassa, 20°; Key West, 21°; Cedar Keys, Pensacola, and San Diego, 22°; Hatteras, Fort Macon, Portsmouth, North Carolina; Port Eads, and Starkville, 23°; Block Island and Chincoteague, 24°; Chattanooga and Indianola, 25°; Atlanta, Fredericksburg, Texas; Mobile, and Montgomery, 26°; Cairo, Newport, Sandy Hook, and Jacksonville, 27°; Knoxville, Vicksburg, New York, Cape May, and Norfolk, 28°; Atlantic City, Barnegat, Nashville, Charleston, and Life-Saving Station, No. 6, North Carolina, 29°; Little Rock, Philadelphia, Cape Henry, Augusta, and Savannah, 30°. The largest are: Fort Lapwai, Idaho, 81°; Fort Missoula and Terry's Landing, Montana, 74°; Deer Lodge, Montana, 73°; Fort Keogh, 72°; Fort Buford, Dakota, 70°; Colfax, Washington Territory, 69°; Umatilla, Oregon, and New Chicago, Montana, 66°; Spokane Falls, Washington territory, and Fort Stevenson, Dakota, 54°; Cœur d'Alene, Idaho, 63°; Lewiston, Idaho; Pomeroy, Washington territory, and Fort Washakie, Wyoming, 62°; Dayton, Washington territory; Winnemucca, Nevada; Boise City and Eagle Rock, Idaho; Fort Custer, Montana; Smithville, Dakota, and Forts Bennett and Sully, Dakota, 61°.

The greatest daily ranges varied in the different districts as follows:

New England: From 17° at Block Island on the 30th, to 34° at Boston on the 30th.

Middle Atlantic states: From 16° at Delaware Breakwater on the 19th, to 32° at Williamsport on the 21st.

South Atlantic states: From 14° at Portsmouth, North Carolina, to 23° at Augusta on the 23d.

Florida peninsula: From 17° at Key West on the 29th, to 19° at Cedar Keys on the 22d.

East Gulf states: From 15° at New Orleans on the 7th, to 23° at Vicksburg on the 20th.

West Gulf states: From 16° at Port Eads on the 1st and 16th, and 17° at Galveston on the 4th, to 31° at Fort Smith, Arkansas, on the 12th.

Rio Grande valley: From 31° at Rio Grande City on the 3d, to 33° at Eagle Pass on the 4th.

Ohio valley and Tennessee: From 21° at Cincinnati and Indianapolis on the 13th, Nashville on the 14th, and Chattanooga on the 23d, to 27° at Pittsburgh on the 20th.

Lower lake region: From 21° at Sandusky on the 11th, at Toledo on the 12th and 19th, and at Cleveland on the 25th, to 32° at Oswego on the 14th.

Upper lake region: From 16° at Grand Haven on the 12th, 13th, 29th and 30th, to 28° at Alpena on the 11th, and at Marquette on the 13th.

Extreme northwest: From 32° at Bismarck on the 11th, to 40° at Fort Stevenson on the 26th.

Upper Mississippi valley: From 20° at Keokuk on the 21st, to 31° at Saint Paul on the 10th.

Missouri valley: From 23° at Omaha on the 12th, to 41° at Fort Bennett on the 11th.

Northern slope: From 32° at Helena on the 1st, to 46° at Cheyenne on the 11th, and 51° at Fort Keogh on the 26th.

Middle slope: From 19° on the summit of Pike's Peak on the 13th, 17th and 27th, to 40° at West Las Animas on the 1st.

Southern slope: From 25° at Henrietta on the 6th and at Fort McKavitt on the 11th and 12th, to 36° at Fort Stockton on the 11th.

Southern plateau: From 25° at Fort Grant on the 2d, to 44° at Fort Apache on the 4th.

Middle plateau: From 29° at Salt Lake City on the 14th and 15th, to 48° at Winnemucca on the 21st.

Northern plateau: From 40° at Lewiston on the 3d and Boise City on the 12th, to 50° at Fort Missoula on the 19th.

North Pacific coast region: From 32° at Portland on the 2d, and 7th, to 48° at Roseburg on the 29th.

Middle Pacific coast region: From 16° at San Francisco on the 9th, to 36° at Sacramento on the 8th.

South Pacific coast region: From 18° at San Diego on the 10th, to 50° at Campo on the 30th.

FROSTS.

In the various states, the occurrence of frost is reported as follows:

Colorado: Pike's Peak, 4th, 7th to 10th, 23d; Pagosa Springs, 10th, 18th, 23d.

Table of Maximum and Minimum Temperatures for August, 1882.

State or Territory.	Signal Service.			U. S. Army Post Surgeons or Voluntary Observers.		
	Station.	Max.	Min.	Station.	Max.	Min.
Alabama.....	Mobile.....	96	67	Opelika.....	102	55
Do.....	Montgomery.....	96	67	Calera.....	102	55
Arizona.....	Phoenix.....	114	46	Maricopa and Texas Hill.....	117	42
Do.....	Fort Apache.....	101	60	Brinkley and Midison.....	119	42
Arkansas.....	Fort Smith.....	101	60	Red Bluff.....	118	40
Do.....	Little Rock.....	101	45	Mammoth Tank.....	102	34
California.....	Campo.....	101	45	Berryvale and Dunnigan.....	98	49
Do.....	.....	.....	.....	Fort Lyon.....	102	34
Colorado.....	West Las Animas.....	101	47	Fort Garland.....	98	49
Do.....	Denver.....	58	48	Southington.....	98	49
Connecticut.....	New Haven.....	58	48	Distributing Reservoir.....	94	63
Dakota.....	Fort Buford.....	107	36	Live Oak.....	99	63
Do.....	Fort Stevenson.....	36	63	Fort Barrancus.....	101	43
Delaware.....	Del. Breakwater.....	83	63	Way Cross.....	101	43
District of Columbia.....	Washington.....	91	56	Gainesville.....	94	45
Florida.....	Jacksonville.....	96	69	Charleston and Peoria.....	94	45
Do.....	.....	.....	.....	Riley.....	94	52
Georgia.....	Savannah.....	96	64	Logansport.....	94	52
Do.....	Augusta.....	115	34	Guttenburg.....	96	43
Idaho.....	Fort Lapwai.....	115	34	Nora Springs.....	103	49
Illinois.....	Cairo and Springfield.....	8	49	Russell.....	103	49
Do.....	Champaign.....	90	52	Wellington.....	93	58
Indiana.....	Indianapolis.....	90	52	Frankfort.....	93	58
Indian Territory.....	Fort Sill.....	102	49	New Iberia.....	129	58
Do.....	Fort Supply.....	91	48	Cornish.....	94	43
Iowa.....	Des Moines.....	91	48	Orou.....	92	43
Do.....	Dubuque.....	98	52	Great Falls.....	92	50
Kansas.....	Dodge City.....	98	52	Woodstock.....	99	40
Do.....	.....	.....	.....	Worcester.....	99	40
Kentucky.....	Louisville.....	90	57	Heath.....	90	40
Louisiana.....	Shreveport.....	97	65	Northport.....	90	40
Maine.....	Portland.....	90	57	Fort Brady.....	90	40
Do.....	Eastport.....	90	57	Meridian.....	107	58
Maryland.....	Baltimore.....	90	57	Macon.....	99	48
Do.....	.....	.....	.....	Pierce City.....	99	48
Massachusetts.....	Springfield.....	93	43	Jefferson Barracks.....	113	27
Do.....	.....	.....	.....	Fort Ellis.....	113	27
Michigan.....	Port Huron.....	88	42	Fort Niobrara.....	106	42
Do.....	Marquette.....	95	35	Fort McDermitt.....	107	37
Minnesota.....	St. Paul.....	95	35	Boca.....	96	36
Do.....	Moorhead.....	95	35	New Market.....	96	36
Mississippi.....	Vicksburg.....	95	35	Grafton.....	96	36
Do.....	Starkville.....	94	58	Pequannock.....	96	36
Missouri.....	Springfield.....	94	58	Heming.....	100	36
Do.....	St. Louis.....	107	29	Fort Union.....	100	36
Montana.....	Terry's Landing.....	107	29	West Point.....	100	36
Do.....	Deer Lodge and Fort Miss. ult.....	95	52	Madison Barracks and Waterburg.....	99	59
Nebraska.....	North Platte.....	95	52	Lumberton.....	99	59
Do.....	Omaha.....	102	42	Ruggles.....	94	45
Nevada.....	Winnemucca.....	102	42	Westerville.....	94	45
New Hampshire.....	Mt. Washington.....	96	26	Fort Klamath.....	94	35
Do.....	.....	.....	.....	Meadville.....	94	38
New Jersey.....	Little Egg Harbor.....	98	56	Dyberry.....	99	50
Do.....	Barnegat.....	98	56	St. Matthew.....	99	50
New Mexico.....	Silver City and Fort Bayard.....	93	40	Kinastree.....	97	53
Do.....	Santa Fe.....	93	40	Withe.....	97	53
New York.....	Albany and Oswego.....	92	47	Erin.....	97	53
Do.....	Rochester.....	92	47	Waco.....	107	53
North Carolina.....	Kittyhawk.....	95	61	Promontory.....	110	49
Do.....	Charlotte and Smithville.....	95	61	Woodstock.....	96	37
Ohio.....	Cincinnati and Columbus.....	89	48	Acetink.....	96	37
Do.....	Sandusky.....	110	44	Snowville.....	96	48
Oregon.....	Umatilla.....	110	44	Helvetia.....	86	47
Do.....	Portland.....	92	50	Neillsville.....	85	46
Pennsylvania.....	Williamsport.....	92	50	.....	87	46
Do.....	.....	.....	.....	La Crosse and Milwaukee.....	49	38
Rhode Island.....	Narragansett Pier.....	91	48	Fort Washakie.....	103	38
South Carolina.....	Charleston.....	97	68	.....	.....	.....
Do.....	.....	.....	.....	.....	.....	.....
Tennessee.....	Memphis.....	92	60	.....	.....	.....
Do.....	Nashville.....	106	48	.....	.....	.....
Texas.....	Eagle Pass.....	95	45	.....	.....	.....
Do.....	Fort Elliott.....	95	45	.....	.....	.....
Utah.....	Salt Lake City.....	93	49	.....	.....	.....
Vermont.....	Burlington.....	93	49	.....	.....	.....
Virginia.....	Cape Henry.....	93	58	.....	.....	.....
Do.....	Lynchburg.....	109	34	.....	.....	.....
Washington Ter.....	Altoa.....	84	53	.....	.....	.....
Do.....	Colfax.....	87	53	.....	.....	.....
West Virginia.....	Morgantown.....	84	53	.....	.....	.....
Wisconsin.....	Madison.....	87	53	.....	.....	.....
Do.....	La Crosse and Milwaukee.....	49	38	.....	.....	.....
Wyoming.....	Fort Washakie.....	103	38	.....	.....	.....

Connecticut: New Haven, 19th: Light frosts occurred in the valleys in Litchfield county.

Dakota: Fort Stevenson, 31st: Frost reported from neighboring localities; Tobacco Garden, 31st.

Idaho: Eagle Rock, 29th, 30th; Boise City, 27th, 28th, and 29th; Fort Lapwai, 28th.

Illinois: Chicago, 10th: Frost reported to have occurred in the suburbs of the city.

Iowa: Cresco, 10th: Killing tender vegetation; Nora Springs, 10th.

Maine: Cornish, 19th.

Massachusetts: Heath, 19th.

Montana: Fort Missoula, 27th.

Nevada: Carson City, 31st: Killing vegetation.

New Hampshire: Mount Washington, 18th, 19th, 22d, 26th; Anburn, 18th; Grafton, 14th, 19th, 21st; New Market, 19th: Killing squash, and pumpkin vines.

New Jersey: Readington, 30th.

New York: Friendship, 19th, 20th.

Oregon: Albany, 26th; Fort Klamath, 17th, 26th.

Pennsylvania: Blooming Grove, 18th; Dyberry, 19th, 20th, 21st; Wellsboro, 20th, 21st.

Washington territory: Colfax, 28th.

Wisconsin: La Crosse, 10th; Madison, 10th: Frost reported from surrounding country; Neillsville, 10th.

ICE.

The formation of ice is reported to have occurred on the summit of Mount Washington on the 18th.

PRECIPITATION.

[Expressed in inches and hundredths.]

The distribution of rainfall over the United States and Canada, as determined from observations taken at more than six hundred stations, is exhibited on chart number iii. The table on the left-hand corner of this chart, shows the average monthly rainfall, determined upon the records of Signal Service stations in the several districts, and the excess or deficiency as compared with the average of many years. There has been an excess of rainfall in all districts east of the Mississippi river, except in New England and the south Atlantic states. Excesses have also occurred in the west Gulf states, the southern slope, and in the southern and middle plateau districts, the largest being 4.59 and 3.21 in the southern slope and east Gulf states, respectively. A deficiency of 2.84 occurred in New England, 2.34 in the Missouri valley, and 1.79 in the extreme northwest, these being the largest deficiencies reported. In the south Atlantic states, upper Mississippi valley, northern and middle slopes, northern plateau, north and south Pacific coast regions, deficiencies ranging from 0.10 in the south Atlantic states to 1.33 in the middle slope, have occurred. On the summits of Mount Washington and Pike's Peak, deficiencies of 5.35 and 1.78, respectively, are reported.

DEVIATIONS FROM AVERAGE PRECIPITATION.

Under this heading, departures exhibited by the regular Signal Service stations, are shown in the table of comparative monthly rainfalls, as published in the lower left-hand corner of chart iii. The following items of interest, in connection with this subject, are reported by voluntary observers:

Illinois: Riley, monthly rainfall, 2.00 or 1.47 below the August average of the past twenty-one years. The total rainfall for the summer of 1882, is 1.62 less than the summer average of the same period.

Indiana: Logansport, monthly rainfall, 3.59, is slightly below the August average of the past twenty years. During that period, the largest August rainfall, 9.14, occurred in 1876; the smallest, 0.68, occurred in 1881.

Iowa: Clinton, monthly rainfall, 2.61 or about the August average.

Kansas: Yates Centre, monthly rainfall 1.71 or 0.88 below the August average of the past two years. Lawrence, monthly rainfall, 0.09 or 3.72 below the August average of the past fifteen years, and is 0.81 below the smallest August rainfall (0.90 in 1873) of the same period. The largest August rainfall, 8.32, occurred in 1868. The total precipitation for the eight months ending August 31st, is 19.55 or 5.68 below the average of the corresponding months, of the past fourteen years. Wellington, monthly rainfall, 1.10 or 1.38 below the average of the past four years.